Trees For Kids 2008 Backyard Conservation



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Trees For Kids / Teens 2008 Team

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A SPECIAL THANK YOU TO ALL OUR TREES FOR KIDS / TEENS PARTNERS FOR 2008!



















Trees For Kids 2008

The Program

Trees For Kids / Teens is an educational program that involves learning about and planting trees, with a focus on Iowa's elementary and secondary school students. Its goals are to educate students about the values of trees and to encourage tree planting projects at schools or other public areas around the state of Iowa.

This unique program is sponsored by the Iowa Department of Natural Resources - Bureau of Forestry, MidAmerican Energy, Black Hills Energy, Alliant Energy, Trees Forever, Iowa Tree Farm Committee, Iowa Woodland Owners Association, Iowa Bankers Association, and Iowa Landscape and Nursery Association.

The educational materials include tree/forestry information and classroom activities designed to compliment science, reading, math, geography, computer skills, history, and other subjects. Feel free to utilize any or all of the materials and to print/photocopy specific activities. If you would like a hard copy, please contact the Iowa DNR Trees For Kids Coordinator at 515/281-6749 or visit the TFK / TFT webpage at: www.iowadnr.gov/forestry/treesforkids.

The Trees

Trees For Kids / Teens offers opportunities to have demonstration tree plantings at your school. Most of these plantings are done in celebration of Earth Day and Arbor Day in the spring, but can be planned for anytime that the weather will cooperate. Contact your local District Forester or the Trees For Kids Coordinator at 515/281-6749 for more information on these demonstration plantings.

We suggest that you do the following to prepare for your tree planting:

- Discuss planting trees with your principal, grounds keeper, and all other interested parties
- Contact your District Forester or the Trees For Kids Coordinator to arrange a planting event
- Locate an appropriate site
- Decide what species you would like to plant
- Schedule after-planting maintenance and care
- Coordinate a youth group / class to participate in the planting
- Find volunteers and planting materials (shovels, gloves, hoses, etc.)
- Make arrangements to have the plant materials delivered
- Set a planting day, choose a rain day
- Arrange to have mulch delivered / donated
- Finalize plans
- Contact Iowa One Call 1-800-292-8989 to locate utilities (give at least 48 hours notice)

What Tree is Right for Your Planting?

Trees in the urban environment provide many benefits including beauty, shade, visual screening, and energy conservation. Unfortunately, it can be difficult to get a shade tree established in the tough growing conditions of an urban setting. The soils are often poorly drained and overly compacted, making it difficult for a shade tree to survive and thrive.

To reduce transplanting problems, it is important to select a tree that best suits the planting site. Before planting, envision how the mature tree will fit into the site. Will it interfere with structures, utilities, sidewalks, playgrounds, or block the view of traffic? Will the selected tree produce maintenance problems due to unwanted fruit or messy leaf litter? Selecting the correct tree for the site can reduce future problems.

During the planning, match the soil drainage on the property to the tree's requirements and make sure that the tree will not outgrow the site. Diversify the mix of tree species to maximize resistance to insects and disease. Proper planning, planting and post-planting care can help insure a healthy, long-lived tree. Below is a list of trees and their growing requirements. Use this list to help determine what tree is right for your planting project.

Species	Growth rate	Shade tolerance *	Soil drainage**	Height (ft)
Aspen, Bigtooth	fast	very intolerant	mp, mw	20-40
Aspen, Quaking	fast	intolerant	mp, mw, well	40-50
Basswood, Amer.	medium	tolerant	mw, well	60-80
Cherry, Black	medium	intermediate	mw, well	50-60
Cherry, Choke	medium	intermediate	poor-well	20-30
Coffeetree, KY	medium	intermediate	mp, mw	60-75
Hackberry	medium	intolerant	mp, mw, well	40-60
Hawthorn	slow	intolerant	mw, well	15-30
Hickory, Shagbark	slow	intermediate	mp, mw, well	60-80
Locust, Honey	fast	intolerant	mw, well	50-70
Maple, Red	medium	intermediate	poor-well	40-60
Maple, Sugar	slow	intolerant	mw, well	60-75
Oak, Bur	slow	intermediate	mp, mw, well	70-80
Oak, Pin	medium	intermediate	poor, mp, mw	60-70
Oak, Red & Black	medium	intermediate	mw, well	60-75
Oak, Shingle	slow	intolerant	mp, mw, well	50-60
Oak, Swamp White	fast	very intolerant	poor, mp, mw	50-60
Oak, White	slow	intermediate	mw, well	50-80
Pine, White	medium	intolerant	well	50-80
Red Cedar, Eastern	slow	very tolerant	mp, mw, well	40-50
Sycamore	fast	intermediate	poor-well	70-100
Walnut, Black	fast	intolerant	mw, well	50-75

^{*} Shade intolerant trees require full sunlight, intermediate trees can handle some shade, and shade tolerant trees can handle low, partial, or full sunlight.

As always, there are exceptions to these general rules.

^{**} Poor, Moderately Poor, Moderately Well, and Well.

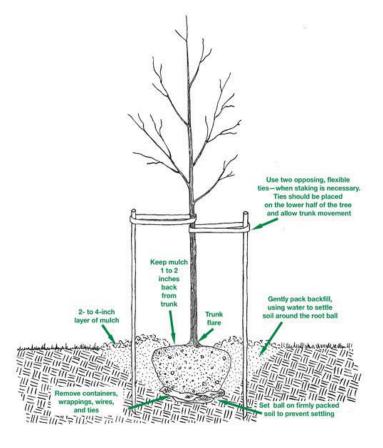
Planting and Caring for Newly Planted Trees

Planning & Species Selection

- Consider where the above and below ground utilities are located (i.e. electric wires, phone and television cables, sewer and water pipes). Call **Iowa One Call at 1-800-292-8989** at least two days before you start digging to find the exact location of underground utilities. "It's free, it's the law!"
- Examine the soils in the selected site to make sure they match the tree species you will be considering. Does the soil stay wet or saturated for an extended period of time after rains? Or does the soil seem dry and somewhat sandy? Is this a high traffic area such as a playground that will have compacted, poorly drained soils?
- Pick a species that will fit in the site selected. The site should be a minimum of 40 feet away from electrical power lines and light poles and 20 to 30 feet away from buildings for large shade trees.
- Consider low-growing trees for planting areas that are closer to power lines and light poles. Utility companies recommend keeping the vegetation at least 10 feet away from existing lines. Keep in mind that most power lines are 30 to 35 feet above the ground.
- Avoid planting low-growing trees near signs, street corners, and other areas where they could block people's view.
- Is the planting site in full sun, partial sun, or full shade?

Proper Planting

- Dig the planting hole 2 to 3 times wider and no deeper than the root ball.
- Do not plant the tree too deep or too shallow, the root collar (swelling where the trunk meets the large supporting roots) should be at or slightly above ground level. Supporting roots may be on the surface or might be covered by a couple of inches of soil.
- Remove all twine and plastic labels from the branches and trunk and at least the top one-third of the burlap and wire from the root ball (remove all material if not natural burlap). If the tree is container grown, remove it from the container.
- Lower the tree by the root ball (not the trunk) carefully into the hole to avoid damaging the trunk or root system.
- Back-fill the hole with the original soil; do not use amendments such as moss or potting soil.
- Gently settle the soil around the roots by hand, making sure that air pockets are not created. Gently step around the tree to firm up the soil.
- Slowly water the area to remove any air pockets that remain. Mulch around the tree with wood chip mulch to keep the site moist. Keep mulch away from the base of the tree to prevent moisture buildup that can lead to rot.
- Avoid watering every day; water heavily (ten gallons or a hose on a slow drip for twenty minutes) every seven to ten days to encourage deep root systems, depending on rainfall.



Backyard Conservation:

The Environment Within Your Reach

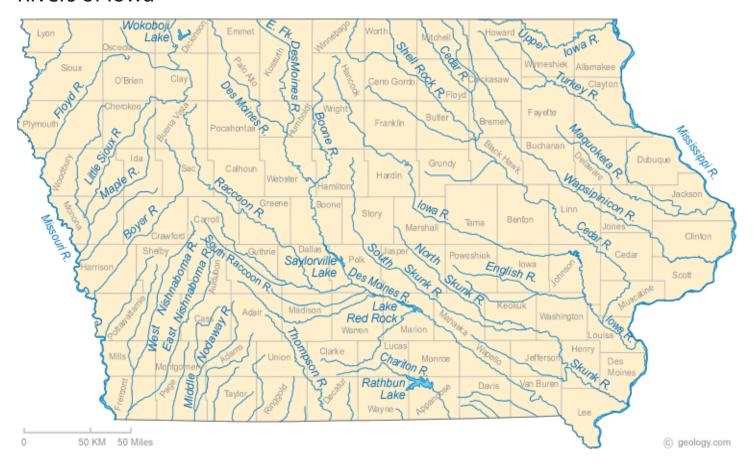
The environment is all around us; there is a whole world of interesting plants and animals right in your backyard! Getting to know your urban ecosystem is a great way to understand larger ecosystems. There are environmental issues in your town or city that correspond to national or even global issues. These include soil erosion, energy usage, diversity loss, water quality, and habitat loss.

You are a global citizen, but feeling like you can help with global issues can be overwhelming. There is a lot that you can do in your own backyard, home, or town that can assist in reducing your impact on the environment. This booklet will help you get to know your local environment and show you how to make a difference in the world in which you live.



Iowa: Get To Know Your State

Rivers of Iowa



Activity

Do you know the major rivers near your community? Use a map or get online to find a river near you and ask questions like:

What is a river? What is a stream? What is a reservoir? What is a watershed?

How healthy is the river ecosystem? How do you know if a river is healthy?

Are there any major pollution problems?

What kind of plants and animals live around and use the river?

Are there any threatened and endangered plants or animals in the watershed?

What kinds of activities can you do on or near a river?

Where does your river start? Where does it end?

What can **you** do to improve your watershed and river?



Native Trees and Shrubs

l	
American	Basswood

Common Name

American Elm American Hornbeam

Balsam Fir

Balsam Poplar Bigtooth Aspen

Bitternut Hickory

Black Ash Black Cherry Black Maple

Black Oak

Black Walnut Blackhaw Viburnum

Blackjack Oak

Blue Ash Boxelder

Buffaloberry Bur Oak

Butternut

Canadian Yew Chinkapin Oak

Chokecherry Common Juniper

Common Pawpaw

Common Persimmon Cottonwood

Dogwood Eastern Red Cedar

Eastern Redbud

Eastern Wahoo Elderberry

Green Ash Hackberry

Hawthorn Hazelnut

Honeylocust

Hoptree Ironwood Scientific Name

Tilia americana Ulmus americana Carpinus caroliniana Abies balsamea

Populus balsamifera Populus grandidentata Carya cordiformis

Fraxinus nigra Prunus serotina Acer nigrum

Ouercus veluntina Juglans nigra

Viburnum prunifolium Quercus marilandica Fraxinus quadrangulata

Acer negundo Sheperdia argentea Quercus macrocarpa Juglans cinerea Taxus canadensis Ouercus muhlenbergii

Prunus virginiana Juniperus communis Asimina triloba

Diospyros virginiana Populus deltoides

Cornus spp. Juniperus virginiana

Cercis canadensis Euonymus atropurpureus Sambucus canadensis

Franxinus pennslyvanica Celtis occidentalis

Crataegus spp. Corylus spp.

Gleditsia triacanthos Ptelea trifoliata

Ostria virginiana

Common Name

Kentucky Coffeetree Mountain Maple

Nannyberry Northern Pin Oak

Ohio Buckeve Paper Birch

Pecan

Pignut Hickory Pin Cherry

Pin Oak Plum Post Oak

Prairie Crabapple Prickly Ash

Quaking Aspen

Red Maple Red Mulberry Red Oak River Birch

Rock Elm Serviceberry

Shagbark Hickory Shellbark Hickory

Shingle Oak

Showy Mountainash

Silver Maple Slippery Elm Speckled Alder Sugar Maple

Sumac

Swamp White Oak

Sycamore White Ash White Oak White Pine

Willow Witchhazel Yellow Birch Scientific Name

Gymnocladus diocius Acer spicatum

Viburnum lentago Quercus ellipsoidalis Aesculus glabra

Betula papyrifera Carya illonoensis

Carya glabra

Prunus pennsylvanica Quercus palustris

Prunus spp. Quercus stellata Malus loensis

Zanthoxylum americanum

Populus tremuloides

Acer rubrum Morus rubra Ouercus rubra Betula nigra Ulmus thomasii Amelanchier spp. Carya ovata Carya laciniosa Quercus imbircaria

Sorbus decora Acer saccharinum Ulmus rubra

Alnus incana Acer saccharum Rhus spp.

Quercus bicolor

Platanus occiedentalis Fraxinus americana

Ouercus alba Pinus strobus Salix spp.

Hamamelis virginiana Betula alleghaniensis

Native trees and shrubs are better adapted to Iowa's extreme weather!

Adapted from: Iowa State University Extension: Trees & Shrubs Native to Iowa: Ames, IA 2001

Trees For Kids 08 - Iowa DNR

Iowa: Get To Know Your State

lowa Ecosystems

Tallgrass prairies, wetlands, and forests covered Iowa before European settlement - 30 million acres of prairie / marshland and 6.7 million acres of forestland. The rich soils and rolling landscapes provided raw materials for homes and fertile land for successful agricultural crops.

Nearly half the state's forests and 90% of the prairies were cleared for agricultural uses by 1900. By 1974, only 1.5 million acres of forest remained and 99.9% of the prairie was lost as more land was cleared to make Midwestern states the "Breadbasket of the World."

Iowa's forest cover has increased in the past 25 years to just over three million acres currently (USDA Forestry Inventory and Analysis). This increase is due in part to reduced livestock grazing and the use of expanded state and federal cost-share reforestation programs by private landowners.

In past years, there has been increasing interest in prairie reconstruction. These reconstructions may never achieve the diversity and complexity of a native remnant prairie but can still serve many of the aesthetic and ecological benefits.

Iowa's forests are very diverse; from north to south and east to west, they reflect changes in climate, soils and land use. There are four general forest types in Iowa: oak-hickory association, maple-basswood association, riparian forests, and savanna. Each of these forest types offer unique benefits including wildlife habitat, wood products, protection from soil and water erosion, and alternative forest products.

Adapted from Iowa PLT Supplement (2002) and Iowa's Natural Heritage (1982); Cooper.

Activity - Iowa Soils

Find a soil survey book or get online and find out what type of ecosystem your communities' soils developed in. Soil survey books have great information besides soil data - they also contain information about the history of your county. Knowing the history of a place helps you understand the present condition!

Ask yourself questions like:

How has the land use changed over time?

Why do soils have certain properties caused by the vegetation they formed under?

What are some issues that Iowans face in dealing with the soil resource (i.e. erosion)?

Resources:

United States Department of Agriculture, Natural Resource Conservation Service office; find your local office by visiting: http://offices.sc.egov.usda.gov/locator/app

Use the online soil survey database: http://websoilsurvey.nrcs.usda.gov/app/

Ecosystem Inventory

An ecosystem is the community of living organisms and non-living materials that interact with each other. Ecosystems can be any size - a whole forest or just a puddle in a prairie.

What types of ecosystems are in and around your community? To understand what makes up an ecosystem, use the inventory data sheet provided to create an inventory of the flora (plants), fauna (animals), and insects in your school yard, neighborhood, or your own backyard. Keep in mind that different plants and animals are around at different times of the year, so you may have to take your inventory during different seasons. Think about why you are finding certain plants or animals during a particular time of year. After you finish your inventory, share it with others. See if what you found is different than what your classmates and friends found. If you need help to identify a plant, animal, or insect, ask your teacher, parents, or friends to help you. Remember, you must act as a steward of the land so don't pick flowers or disturb nests - just be an observer.

To really understand one plant or animal that you found, do some research! Read a book or find information online about it - look for information like:

What does this plant/animal/insect need to survive?

Where can you find this plant/animal/insect? Just in Iowa, or in other states?

Is this plant/animal/insect rare or endangered?

What kinds of habitats can you find this plant/animal/insect in?

What is the life cycle of this plant, animal, or insect?

Is your plant/animal/insect native to Iowa? If not, where is it from?

Find out some interesting facts about your plant/animal/insect and share it with your classmates!



Trees For Kids 08 - Iowa DNR

Inventory Sheet

Name	
Date	
Time of Day	
Location	
Weather Conditions	
	Draw a picture of what you see here!
Item (plant, animal, insect)	
Life Stage (examples: young, adult, flowering, seeds present, etc.)	
Name of Item (Common or Scientific)	
Characteristics	
Notes	
***************	*********
Name	
Date	
Time of Day	
Location	
Weather Conditions	
	Draw a picture of what you see here!
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Life Stage (examples: young, adult, flowering, seeds present, etc.)	
Name of Item (Common or Scientific)	
Characteristics	
Notes	

Keeping a Nature Journal .

Introduction

Famous naturalists and foresters throughout time have kept personal journals to record and remember things that they did and saw. These stories and articles have been wonderful records of the adventures of some of the great conservationists, such as Aldo Leopold. You can also create and keep a record of your adventures while you explore Iowa's great outdoors. This journal will help you identify and understand what you are seeing in the natural world and it can help you assess what you can do to improve your community.

Starting Your Journal

You will need a notebook or diary that you can use for your nature journal. You may also want a couple of field guides to help you identify what you find on your journeys. These are not required, but can be helpful. The only things that you really need are a notebook, pencil, and your five senses!

What Should You Write?

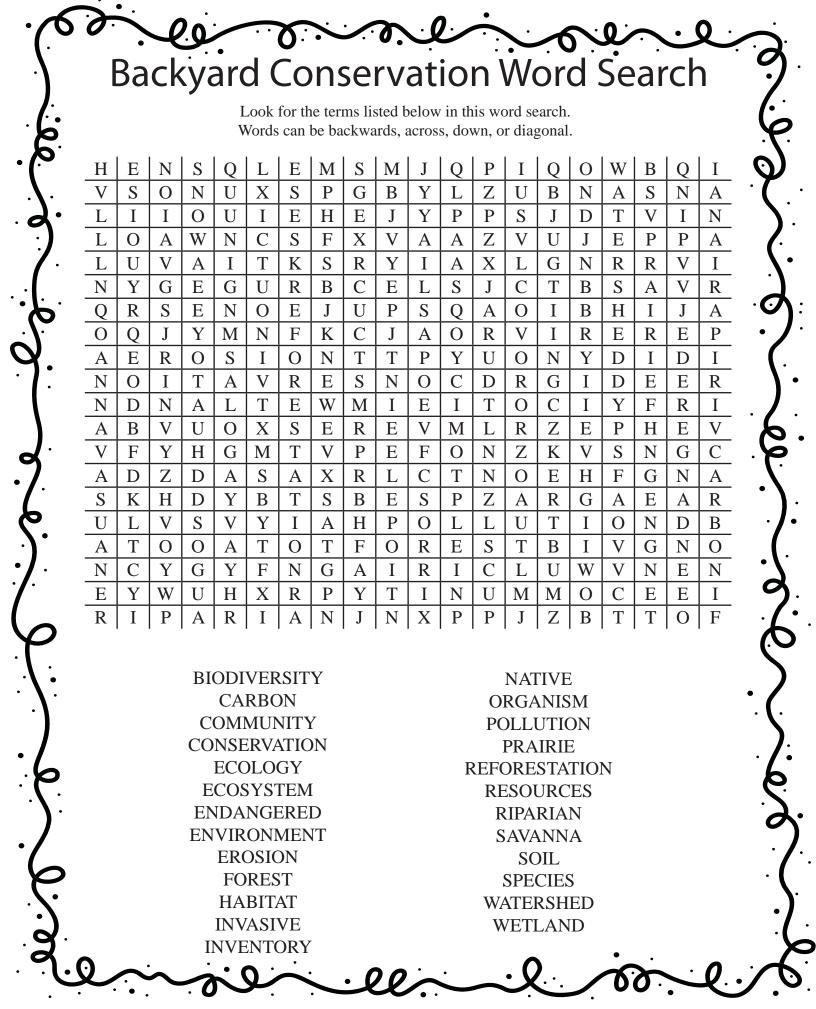
Your journal can be general or you can focus on one special interest that you like (such as forestry, bird watching, or gardening). You could make daily entries or just occasional remarks on special days. Try to remember to record the date, time, location and any of your observations. Write down what you see, hear, smell, or feel when you are outside. Look for animals, birds, insects, and plants. Draw what you see - animal tracks, nests, stray feathers...

Don't make the mistake of only recording rare or unusual things because common events today may be uncommon twenty years from now. Remember, you must act as a steward of the land so don't pick flowers or disturb nests - just be an observer. You will start to know and understand your environment better when you use all of your senses to collect data.





Trees For Kids 08 - Iowa DNR

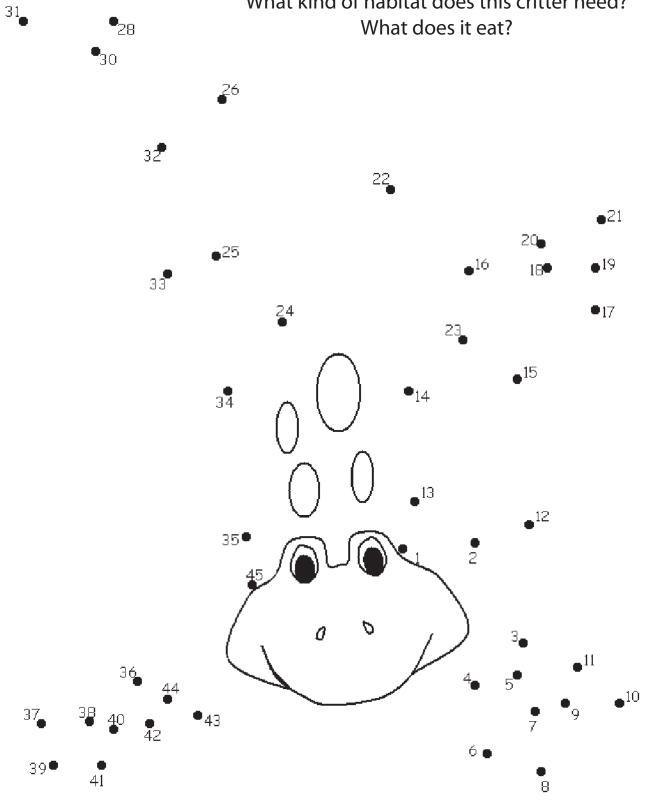


Glossary of Terms

- **Biodiversity** a variety of living things within an ecosystem
- Community a group of people, animals, or plants that share common interests, locality, and/or culture
- **Conservation** the careful utilization of natural resources in order to prevent over-use and to increase sustain ability of those resources
- **Ecology** the branch of biology dealing with the relationships and interactions between organisms and their environment
- **Endangered** threatened with extinction
- **Environment** the air, water, minerals, organisms, and all other external factors surrounding and affecting a given organism at any time
- **Erosion** soil loss due to natural or human caused factors
- Forest a large tract of land covered with trees; woodland
- **Habitat** the natural environment of an organism; place that is natural for the life and growth of an organism
- **Invasive** characteristics of undesirable, non-native plants that tend to quickly colonize, spread rapidly, and compete with native species
- **Inventory** a catalog of natural resources, i.e. a count or estimate of wildlife or plants in a particular area
- **Native** the place or environment in which an organism originated; described as being local (i.e. bald eagles to North America)
- Organism an individual form of life
- **Pollution** the introduction of harmful substances or products into the environment
- **Prairie** a type of ecosystem that consists of native grasses and forbs
- **Reforestation** to replant trees
- **Riparian** area immediately surrounding a water body, such as a river or lake
- Savanna a type of ecosystem that consists of grassland and scattered trees, usually oaks
- **Species** a group of individuals having common characteristics or qualities
- Watershed the region or area drained by a river, stream, etc.; drainage area
- **Wetland** a type of ecosystem where standing water is present at least seasonally, characterized by particular plants and animals present

Connect the Dots

Connect the dots 1-45 to find a creature that lives in Iowa.
What kind of habitat does this critter need?
What does it eat?



•²⁷

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Insect Coloring Page

What is this strange lowa insect? Color the photo and then try to find out information about this crazy bug!



Conservation Tips

There are many small, easy things you can do to help conserve our natural resources.

Remember, you are a global citizen and every little bit helps!

At Home

Take showers instead of baths. Shorten your showers as much as possible. A four minute shower can use 20 - 40 gallons of water!

Shut off the water when brushing your teeth.

Replace incandescent light bulbs with compact fluorescents - the initial cost is more, but they last much longer.

Unplug your electronics when they are not in use. Electronics and appliances still use energy even when they are turned off!

Remember the three R's: reduce, reuse, and recycle. Start a recycling program at your home or school if there is not one already.

Use reusable bags, mugs, and water bottles as much as possible. Many retailers now give a discount if you bring in your own bags and mugs!

When possible, walk or ride your bike instead of driving. Carpooling also helps cut emissions and costs!

Outside

Plant native, drought-resistant varieties to cut down on summer water use.

Mulch your trees, shrubs, and planting beds. Mulch helps retain moisture (and it looks good!).

Use strategically placed plantings to decrease your energy consumption. A properly placed shade tree can save \$100 - \$250 / year on energy costs and can decrease the use of air conditioning by 20%! Shade plantings will reap the most benefits on the south and west sides of your home. Planting windbreaks (using evergreens) on the north side of your home will help keep it warmer in the winter.

Create backyard habitat by utilizing native trees, shrubs, and forbs to attract wildlife. Including a water source will add to the diversity of animal life you can attract.

Reading Rangers

The Reading Rangers program offers trees to be planted by DNR foresters in the state forests in exchange for students reading nature-related books and publications. For every 20 pages of a nature-related publication that is read during Earth Week (April 22 - 30, 2009), the Forestry Bureau will plant a tree in a state forest. Please fill out the form provided and we will plant the trees and send the class a Reading Rangers certificate of appreciation. Please have all forms sent in by May 15th, 2009.

Become a Reading Ranger! Help lowa's Environment!

School Name & Address: _		
Teacher's Name & Grade Le	evel:	
Student	Title of Publication	# of Pages Read

Attach Additional Pages if Necessary

Please mail your completed sheets to:
Trees For Kids/ Teens
Iowa DNR - Bureau of Forestry
502 E. 9th
Des Moines, IA 50319

Trees For Kids 08 - Iowa DNR

Resources

Iowa Department of Natural Resources - Bureau of Forestry

502 E. 9th; Des Moines, IA 50319-0034 515 / 281-5918 http://www.iowadnr.gov/forestry/index.html

Iowa State University - Forestry Extension

Department of Natural Resource Ecology and Management 339 Science II, Iowa State University; Ames, Iowa 50011-3221 515 / 294-1168 www.forestry.iastate.edu

Project Learning Tree

Barbara Gigar, Local PLT Coordinator 2473 160th Rd; Guthrie Center, IA 50115 641 / 747-2200 www.plt.org http://www.iowadnr.com/education/

Natural Resources Conservation Service

Find your local office by visiting: www.ia.nrcs.usda.gov

Black Hills Energy

www.blackhillscorp.com/

MidAmerican Energy

www.midamericanenergy.com

Alliant Energy

www.alliantenergy.com

Trees Forever

770 7th Avenue; Marion, IA 52302 319 / 373-0650 www.treesforever.org

Iowa Woodland Owners Association

Carol Fullenkamp 319 / 837-6178 www.iowawoodlandowners.org

Iowa Tree Farm Committee

www.treefarmsystem.org

Iowa Nursery and Landscape Association

PO Box 1647; Waterloo, IA 50704 319 / 215-6855 www.iowanla.org

Iowa Bankers Association

8800 NW 62nd Ave; Johnston, IA 50131 515 / 286-4300 www.iowabankers.com

Iowa One Call

www.iowaonecall.com 1-800-292-8989



Answer Page

Word Search p. 13

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		О				S	Р									Α		N	
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R	I	P	A	R	I	A	N												

Trees For Kids 2008

Backyard Conservation

Please contact the Trees For Kids / Teens Coordinator at 515 / 281-6749 if you would like a printed copy of these materials or go to the Trees For Kids webpage at:

www.iowadnr.gov/forestry/treesforkids



If you decide to print this booklet, please use recycled paper.

Federal law prohibits employment discrimination on the basis of race, color, age, religion, national origin, sex, or disability. State law prohibits employment discrimination on the basis of race, color, creek, age, sex, sexual orientation, gender identity, national origin, religion, pregnancy, or disability. State law also prohibits public accommodation (such as access to services or physical facilities) discrimination on the basis of race, color, creed, religion, sex, sexual orientation, gender identity, national origin, or disability. If you believe you have discriminated against in any program, activity, or facility as described above, or if you desire further information, please contact the Iowa Civil Rights Commission at 1-800-457-4416, or write to the Iowa DNR at 502 E. 9th; Des Moines, Iowa 50319.

